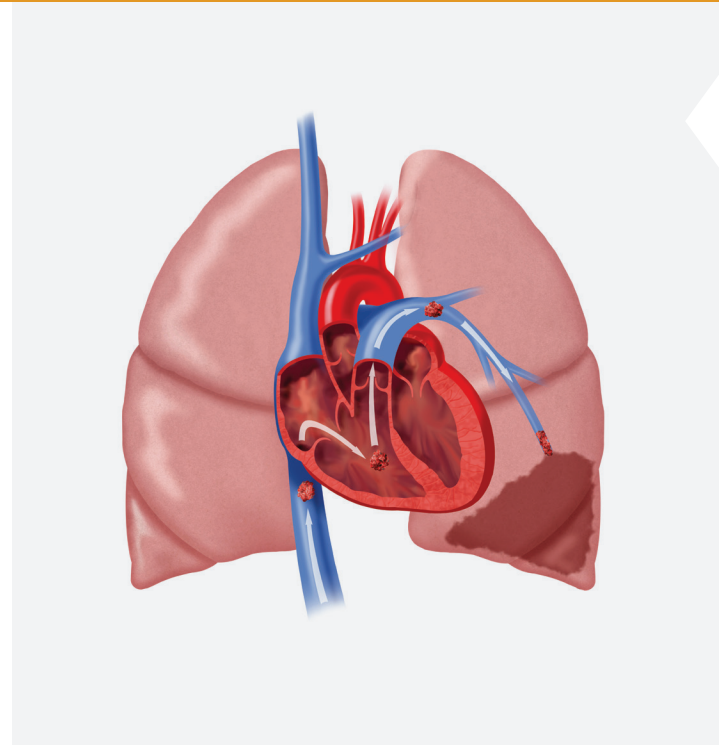


# Deep Vein Thrombosis and Pulmonary Embolism

Deep vein thrombosis (DVT) and pulmonary embolism (PE) are related conditions that are collectively referred to as venous thromboembolism (VTE). DVT and PE are separate, but related, aspects of the same dynamic disease process.<sup>2,3</sup>

DVT occurs when blood clots form in one of the large, deep veins in the legs.<sup>4</sup> Larger blood clots that substantially block the flow of blood may cause pain and swelling in the affected leg. Other symptoms can include redness and tenderness in the leg.<sup>5</sup> Blood clots that only partially block the flow of blood often produce no symptoms; these asymptomatic episodes account for approximately half of all DVT cases.<sup>5</sup>



PE is a serious, potentially life-threatening complication of DVT. A PE most commonly occurs when part or all of a clot dislodges from a lower extremity and is carried along to the pulmonary arterial circulation system, where it can partially or completely block blood flow. Typically, symptomatic PE causes difficulty breathing, rapid heart rate, chest pain, and low blood pressure. Some patients cough up blood, while others faint.<sup>5,6</sup> When PE occurs with large clots, or multiple clots, or when the patient already has preexisting heart or lung disease, the event may be fatal.<sup>6</sup>

## FAST FACTS

- 1** Blood clots form to prevent prolonged bleeding in response to injury to a blood vessel wall; they act as a plug at the site of the blood vessel injury.<sup>1</sup>
- 2** A blood clot typically will dissolve naturally once the injury has healed. However, when inappropriately activated, the blood-clotting cascade can lead to the formation of abnormal and potentially fatal blood clots.<sup>1</sup>
- 3**
  - DVT is a blood clot in a deep vein (usually in the leg) that partially or totally blocks the flow of blood, which may lead to;
  - PE, a blood clot in the lung(s) that can partially or totally block the flow of oxygenated blood.
- 4** Each year, it is estimated that more than 900,000 Americans have a DVT/PE episode, of which, approximately one third are fatal.<sup>4</sup>

## Who is at risk?

People most likely to experience a DVT include those who have undergone major surgery, the elderly, pregnant women, and those using certain medications or therapies. Prolonged immobility and chronic medical conditions such as heart disease and cancer also increase the risk of developing blood clots.<sup>5</sup>

The risk of recurrence remains significant even after patients complete standard duration of treatment:<sup>7</sup>

Individual risk of DVT or PE happening again*		
If caused by:	After 1 year	After 5 years
<b>A recent surgery</b> (eg, hip or knee)	1%	3%
<b>A nonsurgical event</b> (eg, pregnancy, leg injury, long flights)	5%	15%
<b>Unknown risk factor</b>	10%	30%

\* In patients with upper-leg DVT or PE after stopping treatment with a blood thinner. Your individual risk may differ, so talk with your doctor.

## The cost of DVT and PE

The majority of patients affected will experience a DVT alone; however about one-third of patients with a DVT progress to a PE.<sup>8</sup> Nearly 25% of PEs result in sudden death.<sup>9</sup> Recurrent PE events are usually fatal.<sup>10</sup> A risk of a recurrent event is highest in the first six to 12 months after experiencing an event.<sup>4</sup>

Even in the absence of a PE, DVT alone may have burdensome and costly consequences such as venous hypertension, ulceration, an increased risk of recurring clots and post-thrombotic syndrome. Patients with venous blood clots have been observed to have a substantially increased long-term risk of subsequent cardiovascular events such as heart attack and stroke.<sup>11</sup>

In addition to its significant health impact, DVT and PE also exact a financial toll on the healthcare system. The main drivers of these costs are initial and recurrent medical events – or their associated complications – requiring hospitalization or any visit to a healthcare professional.

- In the U.S., DVT and PE costs for initial hospitalization average more than \$9,800 and \$14,000, respectively.<sup>12</sup>
- Rehospitalization costs average more than \$11,800 and \$14,700, respectively.<sup>12</sup>

## Anticoagulant therapy in the treatment of DVT and PE

Prevention of a recurrent DVT and PE is the most important aim of DVT/PE treatment with anticoagulants. Anticoagulants help prevent the formation and halt the progression of a blood clot (thrombus), and their use is a well-established preventative approach.

Current guidelines indicate that long-term anticoagulation therapy for the prevention of recurrent DVT and PE should last for at least three months for a patient who has had a DVT; the continuation and length of treatment with long-term anticoagulation therapy beyond that should be evaluated based on a patient's risk factors, including recurrent DVT and PE.<sup>13</sup>

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